METHODS FOR TESTING MULTIBEAM SATELLITE SYSTEMS USING INPUT POWER TELEMETRY AND OUTPUT NOISE POWER

ABSTRACT

Methods that test multibeam satellite communication systems, including its antennas and transponders. The methods use input power telemetry and output noise power to test satellite transponders and antennas while the satellite is in orbit. One method that tests a satellite receive antenna employs at least two earth stations, one for RF testing and one for telemetry and commanding, with each providing a backup for the other. Other methods may use one or more earth stations to perform testing. Methods are disclosed that generate receive antenna pattern measurements, transmit pattern measurements, input chain frequency response curves, input chain transfer curves, and output chain frequency response curves.